PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert M. France	Confirmation No.	5773
Serial No.:	10/777,391		
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Examiner:	Andrew Lai		
Group Art Unit:	2416		
Docket No.:	1014-076US01/JNP-0326		
Title:	PACKET FORWARDING USING INTERMEDIATE POLICY INFORMATION		

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

Applicant respectfully requests a Pre-Appeal Brief Request for Review, based upon the Examiner's failure to establish a prima facie case of obviousness under 35 U.S.C. § 103. As outlined below, the applied references fail to disclose one or more claimed elements recited in Applicant's independent claims. For this reason, the obviousness rejections under 35 U.S.C. § 103 are improper and must be reversed. Details of some of the factual and legal errors of the rejections are set forth below. For simplicity and brevity, Applicant has primarily focused the arguments below on pending independent claim 1. By setting forth the clear grounds of error, Applicant does not assert that these are the only errors that the Examiner has made, nor does Applicant waive any arguments that may be asserted in an Appeal Brief.

The Final Office Action rejected claim 1 under 35 U.S.C. 103(a) as being unpatentable over Kuhl et al. (US 2003/0118026) in view of Callon et al. (US 5,251,205) and further in view of Raychaudhuri et al. (US 5,684,791). As outlined below, the factual basis of the obviousness rejection is clearly flawed because the cited references fail to teach at least one of the claimed elements recited in Applicant's independent claims. For this reason, the Examiner's reasoning lacks the rational underpinning required to support to a legal conclusion of obviousness under 35 U.S.C. § 103(a).[1]

Prior to addressing the specific requirements of the claims, Applicant offers the following brief explanation to aid the pre-appeal review.

[1] *KSR Int'l Co. v. Teleflex, Inc.,* 550 U.S. 398, 418, 82 USPQ2d 1385, 1396 (2007).

Large computer networks, such as the Internet, often comprise multiple networks, each of which implement one or more network protocols, including the Internet Protocol (IP), Multiprotocol Label Switching (MPLS), Virtual Local Area Network (VLAN), Frame Relay, Asynchronous Transfer Mode (ATM), Layer 2 Tunneling Protocol (L2TP), and the Point-to-Point protocol (PPP).[2] The different network protocols each define a different packet or data unit by which to communicate data. Most of these network protocols support class of service (CoS) information to varying degrees. As noted in paragraph [0006] of Applicant's application, these various protocol often require different formats and techniques for supporting and communicating the CoS information. The network devices that interface between networks that implement different protocols often employ complex mapping techniques to "preserve CoS information when packets are forwarded … from one protocol to another."[3] According to paragraph [0007] of Applicant's specification, "these mapping techniques typically require a unique mapping between every combination of protocols supported by the network device … [such that the] number and complexity of these protocol mappings, therefore, increases substantially as the number of protocols supported by a network device increases."

Applicant's specification described techniques that enable intermediate CoS information that provides a universal classification mechanism independent of any layer two protocols used within the network and protocols of layers on top of layer two protocols used within the network. The described techniques further enable CoS information for a given packet that conforms to a first network protocol to be mapped to the intermediate classification information and then from the intermediate classification information to a second CoS information. The second CoS information conforms to a second network protocol different from the first network protocol. Consequently, the intermediate classification information acts a CoS information exchange by which CoS information that conforms with any type of network protocol can be exchanged for CoS information that conforms with any of the other types of network protocols. Thus, rather than provide complex direct mapping of CoS information between different network protocols that increase as the network device supports additional network protocols, the tehcnqiues provide for the universal classification mechanism to significantly reduce the number of policies required to perform CoS information mapping.

Kuhl in view of Callon and further in view of Raychaudhuri fails to teach or suggest the elements of **claim 1** for at least the following reason.

[2] Applicant's Application ¶ [0004].
[3] Applicant's Application ¶ [0006].

Kuhl in view of Callon and further in view of Raychaudhuri fails to teach or suggest "storing, within the network device, intermediate CoS information that provides a universal classification mechanism independent of: (i) any layer two protocols used within the network, and (ii) protocols of layers on top of layer two protocols used within the network[.]"

Throughout the previous Office Actions, the Examiner continues to ignore the explicit Kuhl teachings that suggest anything but intermediate CoS information that provides an universal classification mechanism independent of any layer two protocols used within the network, as required by Applicant's claim 1. The mapping described by Kuhl, which is shown in FIGS. 7 and 9, clearly requires that an ATM bit, referred to in FIG. 7 as the "CLP" bit, be maintained after mapping the connection level CoS information shown in FIG. 5 to the "Class of Service."

For example, paragraph [0043] of Kuhl clearly indicates that ATM cells include a header 304 that contains a CLP. The CLP bit of the ATM protocol, according to this paragraph of Kuhl, "indicates the drop precedence value of that particular cell." The Kuhl intermediate classification mechanism shown in FIG. 7 "provides an example of a mapping of class of service levels ***and*** drop precedence values to values for [an MPLS] EXP field."[4] Likewise, FIG. 9 of Kuhl shows "a table of a default mapping of class of service ***and*** drop precedence of a cell to a value for the EXP bit field in a MPLS frame …"[5] These two tables shown in FIGS. 7 and 9 of Kuhl define the Kuhl intermediate classification mechanism relied upon by the Examiner. Notably, both of these tables map directly from a class of service/ATM CLP bit combination to MPLS EXP bits and from an MPLS EXP bit to a class of service/ATM CLP bit combination. The intermediate classification mechanism described by Kuhl to map between ATM and MPLS is therefore a ***protocol-specific*** classification mechanism that is dependent on and specifically includes a layer-two ATM protocol CLP bit.

The Examiner responds in the current Advisory Action with a convoluted analogy of mapping class of services to arranging guests to eight guest rooms of a house having "nine front doors" and "four back doors." Applicant does not find this analogy particularly helpful or relevant. Mapping CoS information that conforms with one network protocol to a intermediate classification information and then from the intermediate classification information to CoS information that conforms with a second network protocol involves ***transformations***, unlike merely assigning guests arriving at one door to a particular guest room, which involves no transformation of the guests. In fact, the analogy presented by the Examiner illustrates exactly why the Kuhl does not teach the intermediate CoS information required by Applicant's claim 1. Indeed, the Kuhl system does not involve a transformative mapping required to

[4] ¶ [0070] (Emphasis Added).
[5] ¶ [0027] (Emphasis Added).

support the word "universal," particularly when the universal classification mechanism is characterized by being independent of any layer two protocols (e.g., ATM) used within the network, as required by Applicant's claim 1.

In the current Advisory Action, the Examiner notes that "Kuhl's CLP, embedded in the ATM cell, acts only as a secondary factor in Kuhl's mapping." (Emphasis Exmainer's) This is incorrect. Kuhl does not either teach or suggest that the CLP bit is a secondary factor. This is merely Examiner's opinion. The Examiner explicitly states in the Advisory Action that Figure 7 demonstrates how the CLP bit to map the internal CoS to the appropriate MPLS EXP (CoS) levels by stating that "the eight levels of internal CoS is respectively mapped, depending on the CLP …, to the four levels of MPLS EXP (Cos) levels." This is not a secondary factor that the Kuhl system may employ in only select instances but instead is a primary consideration that is required in order to map the internal CoS to one of the four levels of MPLS EXP (CoS) levels. Without the CLP, in fact, the mapping between the internal CoS and the MPLS EXP would not occur, as the appropriate MPLS EXP cannot be resolved without the CLP bit. The CLP is tied to the ATM protocol but used as intermediate CoS information in order to map the ATM CoS to MPLS CoS. Moreover, regardless of the whether the CLP bit is a secondary factor or a primary factor, it is still a required factor for the Kuhl mapping. In this respect, yet again, Kuhl fails to teach or suggest storing, within the network device, intermediate CoS information that provides a ***universal*** classification mechanism ***independent*** of: (i) ***any layer two protocols*** used within the network, and (ii) protocols of layers on top of layer two protocols used within the network, as required by Applicant's claim 1.

In the current Advisory Action, the Examiner then suggested that "arguing over how the CLP is copied is substantially irrelevant because the essence of Kuhl's mapping is first CoS mapping to internal CoS and then to second CoS with the help of CLP." From this quotation, the Examiner essentially admits that the CLP bit is of help in facilitating the Kuhl mapping, i.e., required. Not only this, Applicant reiterates that Kuhl's mapping would not function without the CLP bit, and therefore that the Kuhl mapping is inextricably linked to the CLP bit of a layer two protocol, contrary to the requirements of Applicant's claim 1.

The Examiner appears to suggest that Kuhl teaches this aspect of the invention set forth in Applicant's claim 1 by way of separating various teachings of Kuhl directed to mapping connection level CoS information to intermediate CoS information from the copying of the CLP bit defined by the layer 2 ATM protocol and carried alongside the intermediate CoS information. The Examiner then appears to ignore the fact that the CLP bit is stored alongside the intermediate CoS information and used

along with the intermediate CoS information in mapping the ATM connection level CoS information to the MPLS CoS information. This argument is not irrelevant, as the Examiner suggests, because the true intermediate CoS information of Kuhl can only be characterized as one that is dependent on the CLP bit defined by the layer 2 ATM protocol. It is improper for the Examiner to argue the "essence" of Kuhl yet ignore the requirements of the Kuhl teachings. The relevant standard by which the Examiner is to assess references revolves around whether or not the references teaches or suggest the elements of Applicant's claim 1. Kuhl as noted above clearly does not provide a solution in which the network device stores intermediate CoS information that provides a universal classification mechanism independent of: (i) any layer two protocols used within the network, and (ii) protocols of layers on top of layer two protocols used within the network, as required by Applicant's claim 1.

Callon et al. and Raychaudhuri et al fail to provide any solution that would overcome or supplant these requirements of Kuhl, as noted in the above mentioned previously filed remarks. Kuhl in view of these references therefore lack any teaching to suggest storing, within the network device, intermediate CoS information that provides a ***universal*** classification mechanism ***independent*** of: (i) ***any layer two protocols*** used within the network, and (ii) protocols of layers on top of layer two protocols used within the network.

In view of the foregoing, the Examiner's rejecting lacks the rational underpinning required to support to a legal conclusion of obviousness under 35 U.S.C. § 103(a) and should be withdrawn. Withdrawal of the rejection and allowance of the claims is kindly requested. Please charge any additional fees or credit any overpayment to deposit account number 50-1778.

Date: _____December 21, 2009_____ By: _____/Matthew K. Gage/_____

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